Space Weather Forecast

Issued on Saturday, 06 November 2021 at 00:26 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance of Moderate class flares. Chance of isolated G1/Minor geomagnetic storms on days 2 and 3.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: There are currently three numbered regions on the visible disc.The region in the northwest has continued to steadily fade, and has been re-classified to reflect it's weakened configuration. The region approaching centre disc is little changed over the last few hours since the emergence of a small opposite polarity spot to the north of the main spot, and has been inactive. A recently numbered region near the southeast limb continues to transit into the southeast quarter, but it's proximity to the limb continues to make a complete assessment difficult at present. This is the source region of the largest flare in the past 24 hours, giving a Common class flare at 05/2156UTC. Solar activity has therefore bee Low.

No Earth-directed Coronal Mass Ejections (CMEs) have been seen in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind speed, as measured by DSCOVR and ACE at L1, has gradually and erratically reduced in speed following the passage of the 2nd November CME, although remain elevated. The total Interplanetary Magnetic Field was initially moderate, but decreased erratically to mainly weak levels. The important north-south component was firmly positive, with an initial moderate peak, and also showed an erratic decrease to mostly weak levels, and only a brief, weak negative deflection. Quiet to Unsettled geomagnetic levels were observed through the period by BGS.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) has returned to background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is forecast to remain mainly Low through the next four days, but with a continuing slight chance of Moderate class flares.

Solar Wind / Geomagnetic Activity: Solar wind speeds are expected to continue elevated at times, with a possible connection to coronal hole from later on day 2 (7th). Quiet to Unsettled geomagnetic activity is expected through much of the period, but perhaps with an increased chance of Active to G1/Minor Storm intervals on days 2 to 3 (7th to 8th).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to be close to background levels.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	20	20	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	15	15	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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